respondents were single (97%) with incomes less than $3200 per year (79%). A multiple regression analysis indicated a positive relationship between skepticism about the effectiveness of smoking cessation medication and current smokers (current smokers, ß=0.8 p<0.001), after controlling for socio-demographics and academic performance variables. We also found the same opinions held true regarding behaviorally based education programs. This shows a significant association of disagreement about the effectiveness of smoking cessation efforts among current smokers (current smokers, ß=0.47p=0.008), after controlling for the same variables. **CONCLUSIONS:** This study shows that there is a significant negative perception among smokers regarding behavioral and pharmacological smoking cessation programs. Implementing education campaigns might be helpful for improving the perception and reciprocally the utilization of such programs. Understanding the smoking population's perspective, does help appropriate adoption of current and future programs.

PHS93

A WEB-BASED SURVEY TO EVALUATE THE FACTORS ASSOCIATED WITH TREATMENT SEEKING BEHAVIOR IN ADULTS WITH ACNE VULGARIS

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OBJECTIVES: To examine the clinical, quality-of-life, demographic and socio-economic factors that influence treatment seeking behavior in adults with acne vulgaris. **METHODS:** We designed an observational, cross-sectional survey of students, staff and faculty members of West Virginia University. We administered a web based survey that included pre-validated questions on demographic and socio-economic characteristics, respondents' subjective assessment of acne severity, duration of acne, acne related quality of life (measured by 4 item Acne Quality-of-Life Scale), pain assessment and treatment seeking behavior. Participants were considered as treatment seekers unless they had "never seen a health professional" for treatment of their facial acne. Chi-square and logistic regression analyses were performed to examine factors that influenced treatment seeking behavior. **RESULTS:** A total of 186 responses were received of which we excluded 28 as these respondents were not currently suffering from facial acne. Majority of study sample (N=158) were females (83%) and Whites (87%). Majority also had access to health care needs such as health care coverage (57%), a person who they considered as personal doctor (60%), a routine medical check-up in the past year (53%). Over-all, 60% of respondents had seen some health professional (pediatrician, dermatologist, both or another type). Higher likelihood of treatment seeking behavior was observed in individuals with a personal doctor or health care provider (Adjusted Odds Ratio (AOR): 3.50; 95% Confidence Interval (CI):1.18, 10.30) and those with higher itchy pain due to acne pimples (AOR: 1.40; 95% CI: 1.07, 1.81). Smaller duration of acne resulted in less likelihood of treatment seeking behavior. **CONCLUSIONS:** Treatment seeking behavior in this sample of adults with acne vulgaris was driven by access to care and clinical factors such as longer duration and itchy pain rather than acne related quality of life and subjective assessments of severity.

PHS94

CREATING THE CANADA PRO NETWORK

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OBJECTIVES: Despite recognition of the importance of the patient perspective, patient reported outcomes (PROs) are not routinely integrated into clinical practice, population monitoring, quality control and health care services planning. We brought key stakeholders together to identify priorities for a national network to accelerate PRO science and facilitate their use across Canada in clinical care, research, and policy planning. **METHODS:** 37 patients, patient advocates, scientists, clinicians, and administrators participated in a 1.5 day consensus process to deliberate on needs, priorities, and strategic partnerships necessary to create and sustain a national collaborative PRO network. We began with expert presentations on past, current, and future directions of PRO development, applications, and research. Small group break-out sessions using the nominal group consensus approach with report backs were used to stimulate discussion around: 1) end-users and their needs; 2) core network activities; 3) implementation methods across multiple users, platforms, settings and regions; and 4) strategic national and international partnerships and existing infrastructure. Priorities were ranked using dotmocracy and a SWOT analysis to identify problems, potential solutions, and generate goals. **RESULTS:** Consensus was achieved on activities, methods, and necessary infrastructure in five areas: 1) Identifying needs of a broad range of stakeholders; 2) Advancing PRO measure science and ensuring relevance to all end users; 3) Successful regional and national implementation; 4) Security/privacy considerations; and 5) Strategic partnerships and linkages. An action plan was generated that included short, mid, and long-term goals around each priority to ensure sustainability. **CONCLUSIONS:** A national network can advance PROs science and implementation to optimize the health of Canadians; improve the quality and value of clinical research, patient care and health policy decisions; and ensure inclusion of the patient voice. The initial action plan is undergoing further specification within working groups, and will leverage funding from foundations, government, and private agencies.

PHS95

DEVELOPING A COMMUNITY BASED REFERRAL AND COUNTER REFERRAL SYSTEM AS A STRATEGY FOR IMPROVING ANTENATAL, POSTNATAL CARE VISITS AND HEALTH FACILITY DELIVERY, CASE OF KISII COUNTY, RURAL KENYA

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OBJECTIVES: Referral is a practice of sending patients from a less to a more specialized level of care. Studies have shown that effective referral systems have a beneficial effect and could make significant contribution to a reduction in home deliveries. The study was meant to develop and test a Community Based Referral Model (CBRM) that could be used to improve antenatal, postnatal care visits and hospital deliveries. The study had three outcome measures e.g. Proportion of pregnant women who attended antenatal care clinics, home deliveries who visited postnatal clinic and proportion of women who delivered in the link hospitals. **METHODS:** A quasi -experimental study was carried out in two sub- locations linked to a hospital within the sub location. Secondary data on antenatal, postnatal visits and hospital deliveries on the past 10 months was extracted from registers in the two link hospitals before implementation of the referral system. One hundred community health workers were trained on community based referral and counter referral system and issued with referral tools. They were instructed to regularly visit the households in order to identify pregnant women, counsel and refer them to antenatal clinics in the linked hospitals. Each community health worker was assigned 25 households; hence 2209 households were regularly visited for a period of 10 months. Endline information was extracted from the same hospital registers. The two sets of data were compared. **RESULTS:** Statistically significant differences were observed in postnatal care visits (p-value 0.007) depicting an increase of 166% and hospital deliveries (p-value 0.001) depicting an increase of 135%. No differences were observed in all the 4 antenatal care visits. **CONCLUSIONS:** In order to get a better understanding of the effectiveness of a community based referral and counter referral system in a rural setting, a larger study with randomly selected intervention and control sites is recommended.

PHS96

PREDICTORS OF HEALTH-RELATED QUALITY OF LIFE AMONG ADULTS WITH AUTISM SPECTRUM DISORDERS

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OBJECTIVE: The objectives of this study were to determine the health-related quality of life (HRQOL) among adults with autism, and compare them to population norms. Factors predicting HRQOL among adults with autism were identified. **METHODS:** A cross-sectional online survey of adults with autism registered with the Interactive Autism Network (IAN) was conducted for this study. Adults with autism were identified based on their capacity to self-report. The HRQOL of adults with autism was compared to population norms using one-way t-test. Factors (severity status, social support, coping style, socio-demographic characteristics) predicting HRQOL were identified using linear regression analysis. **RESULTS:** The final sample included 291 adults with autism. Adults with autism aged 18-24 years and 25-34 years had significantly lower physical HRQOL than their counterparts in the general population. Adults with autism across all age and gender categories had significantly lower mental HRQOL than general US adult population. Regression analyses revealed greater perceived adequacy of social support from family and friends to be associated with better HRQOL. However, greater use of maladaptive coping and higher disease severity were associated with lower HRQOL. Other socio-demographic and health characteristics including insurance status, place of residence, age, marital status, type of autism, and comorbid illnesses were also found to influence HRQOL. **CONCLUSIONS:** Adults with autism had lower HRQOL than their peers in the general population. Modifiable variables including social support and coping style were found to influence HRQOL among adults with autism. Interventions designed to improve HRQOL among adults with autism should emphasize on strengthening support networks and alleviating the use of maladaptive coping.

PHS97

HEALTH-RELATED QUALITY OF LIFE IN CHRONIC HEPATITIS C PATIENTS WITH DEPRESSION

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OBJECTIVES: Chronic hepatitis C (CHC) is a common condition and diminishes health related quality of life (HRQOL). Depression is the most prevalent psychiatric condition in CHC patients and may further impair HRQOL. We sought to identify the relative contribution of modifiable patient factors associated with poor HRQOL in depressed CHC patients. These data can provide a blueprint of how best to target interventions in order to improve the HRQOL of this vulnerable group of patients. **METHODS:** Telephone-based structured interviews were conducted on depressed CHC patients (PHQ9 sore ≥10) seeking care at four VA medical centers during 2012-2013. Depression severity was measured using the Symptom Checklist 20 (SCL-20), generalized anxiety disorder (GAD) using the Mini-International Neuropsychiatric Interview (MINI), and HRQOL with the Short Form-12 (SF12). Medical charts were reviewed for baseline severity of liver disease (presence of cirrhosis). Bivariate and multivariable linear regression models were used to identify predictors of standardized physical (PCS) and mental (MCS) component HRQOL scores. **RESULTS:** Complete HRQOL data were available for 160 patients (mean age 58.9+5.2 yrs.); 97.5% male; 56% African American; and 41% married. The mean baseline SF12 PCS and MCS were 35.2±12.3 and 35.3±10.1, respectively. Individuals with more severe depression and GAD were more likely to report poor PCS (p<0.05). Similarly, with higher depression and GAD scores, receiving care for mental health, as well as current antidepressant use was associated with poor MCS (p<0.05). There was no association between stage of liver disease and HRQOL (p>0.05). After adjusting for demographics, clinical characteristics, and study site, higher depression was associated with both poor PCS and MCS (p<0.05). **CONCLUSIONS:** HRQOL decrement in CHC patients with depression is primarily related to the severity of psychosocial disorders. These data support focusing efforts on co-existing mental health to improve patients HRQOL.

PHS98
QUALITY OF LIFE OF NURSING HOME RESIDENTS IN SINGAPORE
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OBJECTIVES: To identify the predictors of self-reported quality of life (QOL) of nursing home residents in Singapore. **METHODS:** We conducted a cross-sectional survey of residents in six nursing homes operated by voluntary warfare organizations in Singapore. In face-to-face interviews, trained medical students assessed each consenting resident using a modified Minnesota QOL questionnaire for nursing home residents, a modified Katz index for independence in activities of daily living (ADL), the Abbreviated Mental Test for cognitive function, the Diagnostic and Statistical Manual of Mental Disorders IV (DSM-IV) criteria for depression, and questions assessing communication with others. Residents' demographic and clinical information was retrieved from medical records. Predictors of residents' quality of life in five aspects (pain, dignity, food enjoyment, autonomy, and security) were identified using multiple logistic regression models. **RESULTS:** A total of 375 residents (mean age: 77.3 years, range: 55-101 years, female: 53.9%) completed the interviews, representing an overall response rate of 59.8%. Reporting of pain was associated with depression; reporting of feeling respected was associated with longer length of stay and communication with staff; reporting of enjoyment of food was negatively associated with depression; reporting of autonomy in getting up in the morning was positively associated with communication with staff, greater ADL independence and higher cognitive function, and negatively associated with history of falls; and reporting of feeling safe and secure was positively associated with communication with staff and poorer cognitive function. No association was found between QOL and demographic or other clinical characteristics such as medication and co-morbidity. **CONCLUSIONS:** It appears that depression and difficulty in communication with staff are the two main modifiable risk factors of poor quality of life of nursing home residents in Singapore. The findings of our study may be used to guide interventions to improve the quality of care of nursing homes in Singapore.

PHS100
THE QUALITY OF LIFE AND WORK ABILITY IN PATIENTS WITH CHRONIC KIDNEY DISEASE IN URBAN CHINA
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OBJECTIVES: Chronic kidney disease (CKD) has been a leading public health problem. The purpose of this study was to evaluate QOL and work ability of patients with chronic kidney disease in China. **METHODS:** We recruited 401 patients diagnosed with chronic kidney disease with 281 patients in 3-4 stage of CKD and 120 patients in the 5th stage of CKD in Beijing, Shanghai, Guangzhou and Chengdu between November 2012 and December2012. Patients or their carers were interviewed about quality of life by using EQ-5D and absenteeism from work in the past year. We use UK weight to estimate utility(EQ-5D index score) of patients with CKD in urban China. **RESULTS:** Among 401 patients with CKD, 56.4% were male and the mean age was 58.0±15.7 years. 94.3% patients in 3-4 stage of CKD and 98.2% patients in the 5th stage of CKD have at least one kind of health insurance. The average EQ-5D index score of patients in 3-4 stage of CKD was 0.8986, 0.7733 and 0.7088 were for patients in the 5th stage of CKD with hemodialysis and for patients with peritoneal dialysis, respectively. For patients under 60 years old, The fulltime work proportion of patients in 3-4 stage of CKD (31.9%) was higher than those in the 5th stage of CKD, and the fulltime work proportion of patients with peritoneal dialysis (20.6%) was higher than those with hemodialysis (3.8%). **CONCLUSIONS:** The quality of life and work ability for patients in the 5th stage of CKD are rather low. The prevention to delay the time of dialysis could improve patients' quality of life and work ability.

PHS101
STUDY ON WILLINGNESS TO PAY FOR THE CLINICAL PHARMACY SERVICE FOR DIABETES OUTPATIENTS
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OBJECTIVES: To establish the method and measure the willingness to pay of diabetes outpatients for the clinical pharmacy services provided to them, analysis the cost-benefit of clinical pharmacy services. **METHODS:** A close-ended willingness to pay questionnaire was designed based on former literature research and explored study. A sample of 120 type II diabetic outpatients who sought treatment in a provincial hospital were involved. Patients were questionnaire surveyed by trained surveyors before and after he received the clinical pharmacy service which including health care education, prescription review, suggestion of medication administration and so on. The average willingness to pay of each item of clinical pharmacy service were calculated and analyzed in accordance with the age, income, educational background, insurance and complications of patients. **RESULTS:** 107 valid responses of questionnaires out of 120 type II outpatients were collected. in the case of the clinical pharmacy service fee was covered by the medical insurance, patients' maximum willingness payment for clinical pharmacy service was 14.38–18.50 Yuan (2.32–2.98 US $), which included prescription review to avoid adverse reactions: 1.78–2.19 Yuan (0.29–0.35 US$); drug consulting: 1.95–2.42 Yuan (0.31–0.39US$); health care education to improve the compliance: 1.77–2.15 Yuan (0.29–0.35US$); personalized medicine administration: 2.65–3.36 Yuan (0.43-0.54$). In case the clinical pharmacy service fee was paid by patient themselves, the maximum willingness payment for clinical pharmacy service was 8.13–10.06 Yuan (1.31–1.62$). The age, health insurance status, education background, complications, knowledge about clinical pharmacy service had no significant influence on the willingness to pay, while the willingness payment was varied between different income of patients (P = 0.007). **CONCLUSIONS:** Whether the clinical pharmacy service fee was covered by the medical insurance decided the willingness payment of type II diabetic outpatients for the clinical pharmacy service, it indicated clinical pharmacy service should be involved in the medical insurance reimbursement.

HEALTH SERVICES – Health Care Use & Policy Studies

PHS102
UTILIZATION TRENDS OF CANCER PREVENTIVE CARE SERVICES IN THE UNITED STATES: A LONGITUDINAL STUDY OF MEDICAL EXPENDITURE PANEL SURVEY DATA FOR YEARS 1996 TO 2010
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OBJECTIVES: To explore the utilization trends of cancer preventive care services in the United States (U.S.) from year 1996 to 2010. **METHODS:** Longitudinal, retrospective study was conducted on a representative, non-institutionalized sample of the U.S. population using the Household Component of the Medical Expenditure Panel Survey data from year 1996 to 2010. Weighted data were used to examine the total number of U.S. adults who reported the use of cancer preventive care services: for women (Pap smear test), for men (Prostate specific antigen [PSA] test), and for both genders (Sigmoidoscopy, Colonoscopy and Blood stool test). For each preventive care service, response categories were combined according to the standard screening guidelines and graphs were plotted for each service. **RESULTS:** For Pap smear test, a consistent upward trend was observed for those who had the test 'within past 3 years' from year 2000 to 2010. For PSA test, generally, upward trend was observed for those who had the test 'within past 1 year' and downward trend for those who 'never' had the test. For Sigmoidoscopy and/or Colonoscopy, a consistent increase was observed from 1999 to 2007 for those who had the test 'within past 5 years'. Moreover, from 2008 to 2010, use of Sigmoidocopy decreased while use of Colonoscopy increased. Lastly, for blood stool test, downward trend was observed for those who had the test 'within past 1 year' from 2002 to 2010. **CONCLUSIONS:** In general, use of Pap smear, PSA, and Colonoscopy tests increased while use of Sigmoidoscopy and blood stool tests decreased over the years. Success rate of cancer treatment can be greatly increased with early screening and detection of cancer. Findings of this study may be useful in developing consumer awareness campaigns to promote early screening for cancer.

PHS103
PERCEPTIONS OF ACCESS TO HEALTH CARE AND ITS COMPONENTS AND EXPERIENCES WITH CARE DELIVERY: GLOBAL SURVEY OF CITIZENS/PATIENTS FROM 15 COUNTRIES
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OBJECTIVES: To assess citizen/patient perceptions of access to local health care services and the nature of their recent experiences as patients compared to 5years ago, in 15 countries. **METHODS:** A multi-country cross-sectional online survey was conducted in 2012 in Argentina, Australia, Belgium, Canada, France, Germany, Great Britain, Hungary, Italy, Japan, Poland, South Korea, Spain, Sweden, and the United States (US), involving adults aged 18-64 in the US and Canada, and aged 16-64 in all other countries; 1000 individuals participated on a country-by-country basis with the exception of Argentina, Belgium, Hungary, Poland, South Korea, and Sweden, where each have a sample of ~500. Weighting was employed to balance demographics, reflect the adult population per most recent country census data and reflect equal proportion of patients across countries (500/country). Surveys assessed the individual's perceptions of access to health care services (overall & specific components) and their recent experiences (level of care, quality, coordination, speediness, information shared, treatment options and sensitive to personal needs) compared to 5years ago. Descriptive statistics from weighted sample is reported. **RESULTS:** 12,001 citizens/patients participated in the survey; a weighted sample of 7500 was used for analysis. Access to health care services in comparison to 5yrs ago was (much-easier/somewhat-easier vs. no-change/worse): overall:31%vs.69%, hospital:24%vs.76%, general doctor:31%vs.69%, specialist:22%vs.78%, diagnostic-tests:30%vs.70% and medications:30%vs.70%. Perception of recent health care encounters in comparison to 5yrs ago was (very-much/somewhat agree vs. no-change/worse): better level of care: 28%vs.72%, better quality:29%vs.71%, better coordinated:29%vs.71%, speedier:29%vs.71%, better information shared:32%vs.68%, more treatment options:32%vs.68%, more sensitive to personal needs:28%vs.72%. Some country-specific differences were observed. **CONCLUSIONS:** Across countries, approximately 30% of individuals respectively noted improvements in access to care and positive experience with facets of care delivery, in comparison to 5years ago. There appears to be a significant room for improvement that health care/policy stakeholders could focus on to improve care delivery and eventually, population health.

PHS104
UNDERSTANDING PATTERN OF HEALTH SERVICE UTILIZATION AND ITS PREDICTORS IN ELDERLY PATIENTS IN THAILAND: USING A TWO-PART MODEL
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OBJECTIVES: As elderly people tend to need more health care resources, a better understanding of the pattern of and factors affecting their health care use is needed. This study aims to determine the pattern of and factors affecting health service utilization of elderly population in a province in Thailand. **METHODS:** A cross-sectional study was conducted using health insurance standard hospital data set (12-file data set), and standard health centers data set (18-file data set). All population aged 60 years or older who lived in Phitsanulok province in 2011 were included. Descriptive statistics were used to describe the demographic and health service utilization patterns of the patients, including out-patient visits and in-patients admission. We performed two-part model to determine the factors associated with the use of health services. Logistic regression is used to predict the probability of using health care services, while negative binomial regression is used to explain the frequency of using these services. **RESULTS:** A total of 113,728 elderly populations living in Phitsanulok province in 2011 were included. The mean age was 70.18 with 55%